

Notice of Allowability

Application No.

09/499,363

Examiner

Joseph D. Anthony

Applicant(s)

HEILIGER ET AL.

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to IDS filed 07/11/00.
 2. ☒ The allowed claim(s) is/are 1.
 3. ☐ The drawings filed on _____ are accepted by the Examiner.
 4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - (a) ☐ The translation of the foreign language provisional application has been received.
 6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 4 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____. | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jennifer Seng (Reg. # 45,851) on 10/30/03.

The application has been amended as follows:

Claims 2-3 have been canceled.

2. The following is an examiner's statement of reasons for allowance: Independent claims 2-3 have been canceled because they are deemed to be anticipated and/or obvious over many different prior-art references. Independent claim 1 is deemed to be allowable because it is drawn to a process for the production of dithiophosphoric acid polysulfide mixtures by reacting dithiophosphoric acid disulfides with 0.5 to 1.5 mol of sulfur at a temperature of 100 to 140 degrees C.. No prior-art reference can be found that discloses applicant's said claimed process for making dithiophosphoric acid polysulfide mixtures. The closest pieces of prior-art are deemed to be as followed;

1) Graf et al. U.S. Patent Number 5,565,599 teaches stabilized dithiophosphoric acid polysulfides. Graf et al discloses the well known process of making dithiophosphoric acid polysulfides by reacting the sodium salts of the corresponding dithiophosphoric acids with disulfur dichloride, see column 1, lines 13-29. Applicant's invention is thus deemed to be patentable over Graf et al because there is no disclosure or suggestion of any kind to substitute applicant's claimed sulfur reactant for the disclosed and well-known disulfur dichloride reactant.

2) Schubart et al. U.S. Patent Number 5,028,729 teaches process for the production of Bis-(Dialkoxythio-Phosphoryl)-Trisulfides by the elimination of sulfur from Bis-(Dialkoxythio-Phosphoryl)-Tetrasulfides, see the abstract. Applicant's invention is thus deemed to be patentable over Schubart et al because there is no disclosure or suggestion of any kind to use applicant's claimed sulfur reactant to make Bis-(Dialkoxythio-Phosphoryl)-Trisulfides.,

3) Ashworth et al. GB 1 401 435 teaches the use of Bis(dihydrocarbylthiophosphoryl)tri- and tetrasulphides as vulcanization accelerators for rubbers, see page 1, lines 13-24. Ashworth et al teaches the well known process of making Bis(dihydrocarbylthiophosphoryl)tri- and tetrasulphides by reacting dihydrocarbyl-dithiophosphoric acid with sulfur dichloride or sulfur monochloride, see page 1, lines 25-42. Applicant's invention is thus deemed to be patentable over Ashworth et al because there is no disclosure or suggestion of any kind to substitute applicant's claimed sulfur reactant for the disclosed and well-known sulfur dichloride or sulfur monochloride reactants.

4) Stec et al. U.S. Patent Number 5,151,510 teaches method of synthesizing sulfurized oligonucleotides analogs using dithiophosphinic acid disulfide or polysulfide as the sulfurizing agent, see the abstract and Formula II as set forth in column 2. In column 4, lines 28-64, Stec et al discloses various well known methods of making dithiophosphinic acid disulfide or polysulfide none of which is the reaction of sulfur with dithiophosphoric acid disulfide to make dithiophosphoric acid polysulfide as claimed by applicant.

5) Ashworth et al. U.S. Patent Number 3,642,727 teaches vulcanized rubbers having improved resistance to heat are obtained by heating unvulcanized rubber with Bis(dihydrocarbylthiophosphoryl)tri- and tetrasulphides, preferably in the presence of elemental sulfur and a conventional sulfur-curing accelerator, see the abstract and examples 1-6. It must be clearly pointed out that Ashworth does not disclose elemental sulfur as a reactant which is reacted with Bis(dihydrocarbylthiophosphoryl)tri- and/or tetrasulphides, but rather it functions as a vulcanization co-accelerator for rubbers. Ashworth has neither a teaching nor a suggestion of any kind to making applicant's claimed dithiophosphoric acid polysulfide by reacting elemental sulfur with dithiophosphoric acid disulfide.

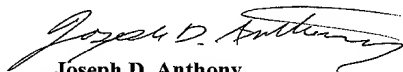
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior-Art Cited But Not Applied

3. Any prior-art reference which is cited on FORM PTO-892 but not discussed above, is cited only to show the general state of the prior-art at the time of applicant's invention.

Examiner Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (703) 308-0446 until 12/04/03; after 12/04/03 my new telephone number will be (571) 272-1117. This examiner can normally be reached on Monday through Thursday from 7:35 a.m. to 6:00 p.m. in the eastern time zone. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The centralized FAX machine number is (703) 872-9306. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0651. The receptionist is located on the 8th floor of Crystal Plaza 3 (e.g. CP-3) and will be the welcome point for all visitors to the building.


Joseph D. Anthony
Primary Patent Examiner
Art Unit 1714

10/30/03